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of the current (254), then they suffer corrosion, and the parts dissolved are subject to transference, in the same manner, as the particles of the body originally under decomposition. An immense series of phenomena of this kind might be quoted in support of the view I have taken of the cause of electro-chemical decomposition, and the transfer and evolution of the elements. Thus platina being made the positive and negative poles in a solution of sulphate of soda, has no affinity or attraction for oxygen, hydrogen, acid, or alkali evolved, and refuses to combine with or retain them. Zinc can combine with the oxygen and acid; at the positive pole it does combine, and immediately begins to travel as oxide towards the negative pole. Charcoal, which cannot combine with the metals, if made the negative pole in a metallic solution, refuses to unite to the bodies which are ejected from the solution upon its surface; but if made the positive pole in a dilute solution of sulphuric acid, it is capable of combining with the oxygen evolved there, and consequently unites with it, producing both carbonic acid and carbonic oxide in abundance.

297. A great advantage is frequently supplied, by the opportunity afforded amongst the metals of selecting a substance for the pole, which shall or shall not be acted upon by the elements to be evolved. The consequent use of platina is notorious. In the decomposition of sulphuret of silver and other sulphurets, a positive silver pole is superior to a platina one, because in the former case the sulphur evolved there combines with the silver, and the decomposition of the original sulphuret is rendered evident; whereas in the latter case it is dissipated, and the assurance of its separation at the pole not easily obtained.

298. The effects which take place when a succession of conducting decomposable and undecomposable substances are placed in the electric circuit, as, for instance, of wires and solutions, or of air and solutions (201, 205), are explained in the simplest possible manner by the theoretical view I have given. In consequence of the reaction of the constituents of each portion of decomposable matter, affected as they are by the

supervention of the electric current  
(260), portions of the  
proximate or ultimate elements proceed  
in the direction of the  
current as far as they find matter of a  
contrary kind capable of  
effecting their transfer, and being  
equally affected by them;  
and where they cease to find such  
matter, they are evolved in  
their free state, *i.e.* upon the surfaces of  
metal or air bounding  
the extent of decomposable matter in the  
direction of the current\*